





Name: \_\_\_\_\_ Date: \_\_\_\_\_

# Unit 4 Test – Angles, Quadrilaterals, Volume, and Surface Area

1. Jon draws a quadrilateral that has two pairs of parallel sides, and 2 pairs of congruent angles. There are no right angles. Which quadrilateral could be the one that Jon drew?

- A. 
- B. 
- C. 
- D. 

2. A trapezoid is a quadrilateral with exactly—

- F. One pair of congruent sides
- G. One pair of parallel sides
- H. Four congruent angles
- J. Four congruent sides

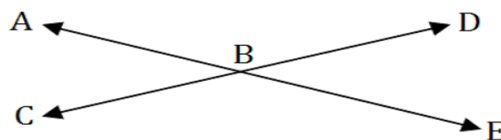
3. Which list describes all of the correct ways that a square can be classified?

- A. Quadrilateral, parallelogram, rectangle and rhombus
- B. Quadrilateral and trapezoid
- C. Quadrilateral, rhombus and rectangle
- D. Quadrilateral and parallelogram

4. A quadrilateral has sides that each measure 9 inches in length. None of the angles are right angles. Which correctly names the quadrilateral?

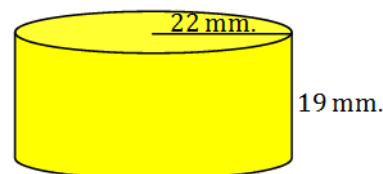
- F. Square
- G. Trapezoid
- H. Rhombus
- J. Rectangle

5. Describe the relationship between  $\angle ABD$  and  $\angle CBE$ .



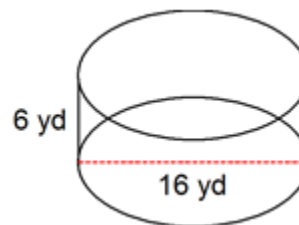
- A. Complimentary
- B. Supplementary
- C. Vertical
- D. Adjacent

6. Which could be used to find the surface area of the cylinder show below?



- F.  $2\pi(19^2) + 2\pi(22)(19)$
- G.  $2\pi(22^2) + 2\pi(22)(19)$
- H.  $\pi(22^2)(19)$
- J.  $\pi(19^2)(22)$

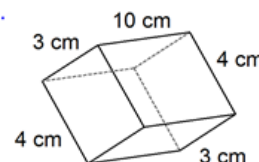
7. Find the volume of the figure:



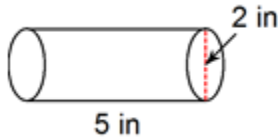
- A.  $1327 \text{ yd}^3$
- B.  $1088.1 \text{ yd}^3$
- C.  $1205.8 \text{ yd}^3$
- D.  $903.1 \text{ yd}^3$

8. Find the surface area of the figure:

- F.  $164 \text{ cm}^2$
- G.  $220.6 \text{ cm}^2$
- H.  $193.5 \text{ cm}^2$
- J.  $258.1 \text{ cm}^2$



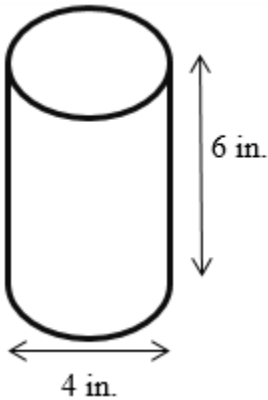
9. Find the surface area of the figure:



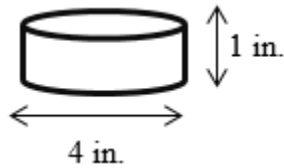
- A.  $75.4 \text{ in}^2$
- B.  $67.9 \text{ in}^2$
- C.  $37.7 \text{ in}^2$
- D.  $80.8 \text{ in}^2$

10. Which cylinder below has the **greatest** volume?

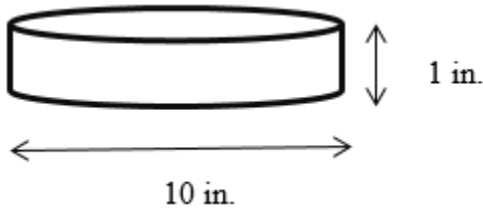
F.



G.

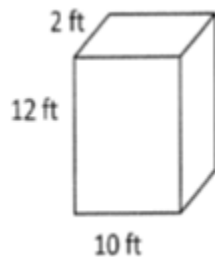


H.



11. Which volume would be correct for a rectangular prism that is twice as wide as the prism shown?

- A.  $120 \text{ ft}^3$
- B.  $240 \text{ ft}^3$
- C.  $480 \text{ ft}^3$
- D.  $720 \text{ ft}^3$



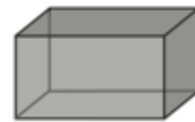
12. A manufacturer is producing soup can labels. If the can is 15 centimeters high and has a radius of 5.1 centimeters, what size will the labels need to be for the can?

- F.  $480.42 \text{ cm}^2$
- G.  $163.3 \text{ cm}^2$
- H.  $643.8 \text{ cm}^2$
- J.  $960.8 \text{ cm}^2$

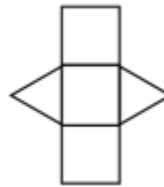
13. What is the result of multiplying the height of a rectangular prism by a scale factor of  $\frac{1}{2}$ ?

- A. The volume will be doubled
- B. The volume will be decreased by  $\frac{1}{2}$
- C. The surface area will be doubled
- D. The surface area will be decreased by  $\frac{1}{2}$

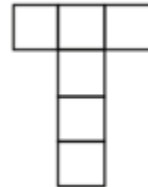
14. Which is the net of the 3D figure shown.



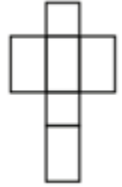
F.



G.



H.



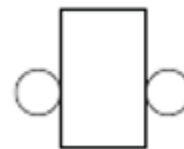
15. Which is the net of the 3D figure shown?



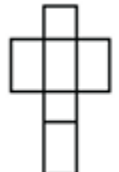
A.



B.



C.



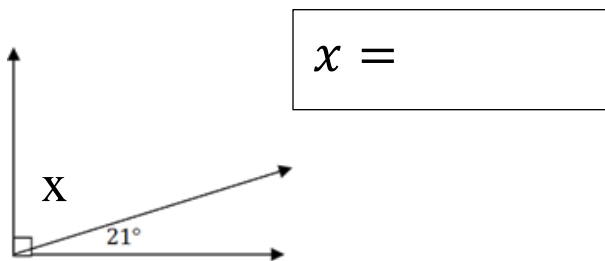
16. The volume of a rectangular prism is 324 feet<sup>3</sup>. What would be the volume of a rectangular prism if the height changed from 9 feet to 3 feet and all the other dimensions remained the same?

- F. 108 ft<sup>3</sup>
- G. 54 ft<sup>3</sup>
- H. 972 ft<sup>3</sup>
- J. 1956 ft<sup>3</sup>

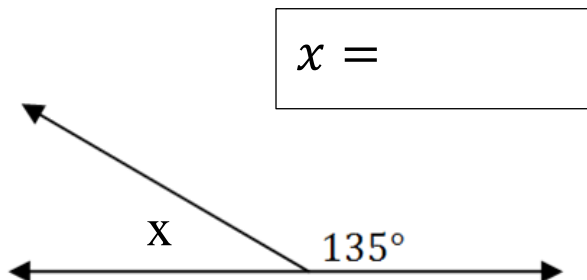
17. A blue rectangular prism has a length of 2 inches, a width of 4 inches, and a height of 6 inches. A red rectangular prism has the same dimensions as the blue prism except the width is doubled. How much greater is the surface area of the red prism?

- A. 64 in<sup>2</sup>
- B. 88 in<sup>2</sup>
- C. 152 in<sup>2</sup>
- D. 240 in<sup>2</sup>

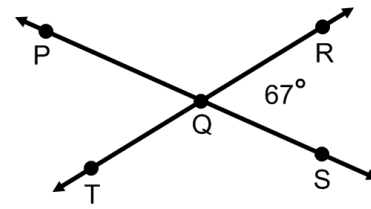
18. Find the measure of the missing angle. Write your answer in the box.



19. Find the measure of the missing angle. Write your answer in the box.



Use the diagram below to answer questions 20-21.



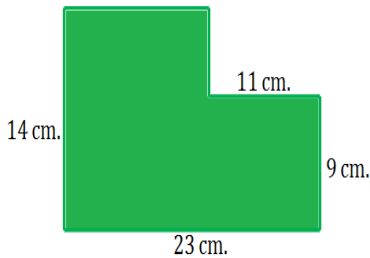
20. Find the measure of  $\angle PQR$ . Write your answer in the box.

21. Find the measure of  $\angle PQT$ . Write your answer in the box.

22. What is the surface area of a tissue box with a length of 8.2 inches, a width of 4.3 inches and a height of 3.5 inches? (Round to the nearest tenths place.)

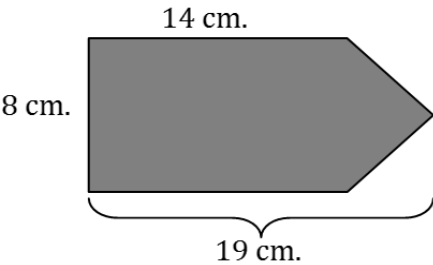
23. A can of paint has a radius of 6 inches and is 15 inches tall. How much paint is in the can?

24. Find the area of the figure below.



A =

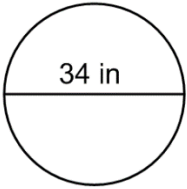
25. Find the area of the figure below.



A =

Find the area of each shape below in questions 26-30.  
Write your answer in the box.

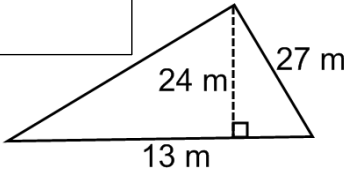
26.



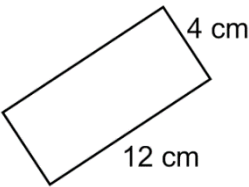
A =

27.

A =



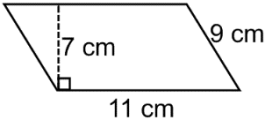
28.



A =

29.

A =



30. Circle the word VOLUME or SURFACE AREA  
for each scenario below.

Painting the outside of a prop for the school play	VOLUME or SURFACE AREA
Wrapping a gift	VOLUME or SURFACE AREA
Filling a swimming pool with water	VOLUME or SURFACE AREA
Finding how much gas the car gas tank will hold	VOLUME or SURFACE AREA
Carpeting the outside of a post for the cat to scratch	VOLUME or SURFACE AREA
Filling a bucket with water	VOLUME or SURFACE AREA

**BONUS:** A cube is 8 inches on each side. What is the height of a cylinder having the same volume, if its radius is 4 inches? (Round to the nearest tenth)

